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Rural Development through Sectoral Growth and Fiscal-Policy Synergy: Evidence from Southeast Sulawesi, Indonesia

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Rural development remains a significant challenge in Indonesia, especially in the eastern region that relies on the primary sector. Although Southeast Sulawesi has recorded positive sectoral economic growth in the past two decades, poverty rates in the region have remained stagnant. This raises fundamental questions about the effectiveness of investment (FDI, DI) and Revenue Sharing Fund (RSF) in stimulating sectoral growth and simultaneously reducing poverty. This study is designed to examine the relationship between the three instruments and Gross Regional Domestic Product (GRDP) in the agriculture, forestry, and fisheries sector, and their implications for rural poverty levels. This study uses a quantitative approach with the Partial Least Squares - Structural Equation Modeling (PLS-SEM) method based on time series data (2009-2023) from Southeast Sulawesi. Five single observed variables are tested through nine hypotheses: three investment-to-GRDP channels, three investment-to-poverty channels, one GRDP-to-poverty channel, and two simultaneous effects. The analysis was conducted with SmartPLS 3.0 using the bootstrapping technique. The results show that FDI ($\beta = 0.301$; $p < 0.05$) and DI ($\beta = 0.666$; $p < 0.001$) have a significant effect on GRDP in the agriculture, forestry, and fisheries sectors. However, the Revenue Sharing Fund (RSF) does not significantly influence GRDP ($p = 0.244$), and none of the three variables show a statistically significant impact on poverty reduction. This suggests the need for improved policy targeting to ensure that sectoral growth translates into inclusive rural development outcomes. Simultaneously, FDI, DI, and RSF have a significant effect on sectoral GRDP ($R^2 = 0.702$), but are not significant on poverty ($R^2 = 0.461$). This indicates the limitations of the trickle-down effect and fragmentation of development policies. This study confirms that investment and fiscal transfers are able to drive sectoral growth, but are not effective enough to overcome structural poverty without complementary social interventions. The uniqueness of this study lies in the use of a simultaneous sectoral approach for natural resource-based regions, as well as the position of the agricultural sector as a strategic path in regional development. Policy recommendations include strengthening fiscal-sectoral integration, as well as sharpening the direction of FDI and DI towards inclusive and labor-intensive subsectors.
Keywords: Rural development, agricultural sector, foreign investment, domestic investment, profit sharing fund.

INTRODUCTION

The agricultural sector is still the backbone of economic life in rural areas, but has not been fully able to improve farmers' welfare and reduce poverty sustainably. Although national economic growth shows a positive trend, the transformation of the agricultural sector in many developing countries especially in rural areas is still lagging behind in terms of productivity, investment, and market integration (Hasddin et al., 2025a; 2025b; Jasman et al., 2023). The World Bank (2023) noted that around two-thirds of the world's extreme poor (those living on less than US$2.15 per day) live in rural areas, and most rely on the subsistence agricultural sector. The Poverty, Prosperity, and Planet 2024 report added that around 3.5 billion people or 44 percent of the world's population still live in poverty based on the US$6.85 per day standard, with the highest concentration in agrarian areas of low-income countries (World Bank, 2024).

Indonesia, as an agricultural country with an economy heavily dependent on rural areas, continues to face similar structural

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challenges. Provinces such as Southeast Sulawesi have abundant natural resources. However, a clear mismatch remains between economic growth and poverty reduction (Hasddin et al., 2025a; 2025b; Jasman et al., 2023). According to Statistics Indonesia Southeast Sulawesi Province (2024a), the number of poor people is still fluctuating 321.53 thousand people in 2023 while agriculture, forestry, and fisheries remain the dominant contributors to regional GRDP (Statistics Indonesia Southeast Sulawesi Province, 2024b). At the same time, the local agribusiness sector has proven to be able to strengthen rural-urban linkages when integrated with infrastructure planning and farmer-driven initiatives (Tonjaya et al., 2024).

The dynamics of investment and fiscal allocation in Southeast Sulawesi reflect the disconnect between economic policy inputs and public welfare outputs. Foreign Direct Investment (FDI) in the province peaked at USD 1,616 million in 2021 before dropping drastically to USD 448 million in 2023 (Statistics Indonesia of Southeast Sulawesi Province, 2024b). Meanwhile, domestic direct investment continues to show a positive trend, from only IDR 19 million in 2010 to IDR 7.734 billion in 2023 (Mirad et al., 2024; Ali et al., 2023). The Revenue Sharing Fund (RSF) (in Indonesia Dana Bagi Hasil/DBH), designed as a fiscal instrument to support vertical justice in financial decentralization, also showed high fluctuations: from IDR 59 billion in 2009 to IDR 238.3 billion in 2020, then dropping to IDR 142.6 billion in 2023. Although fiscal input and investment have increased, poverty reduction remains limited. Thus, a more rigorous evaluation of policy transmission channels—especially through the agricultural sector—is required (Saemu et al., 2024; Bindarto et al., 2024). Recent studies (Wahyuni & Hariyanti, 2023; Pratiwik and Rahmayani, 2023; Hasddin et al., 2025a) confirm that Domestic Investment (DI) significantly contributes to the agricultural sector's growth, while Foreign Direct Investment (FDI) tends to have unstable effects if not supported by strong local institutional readiness. Moreover, Tarigan et al. (2021) emphasized that the success of DBH in driving regional development is highly dependent on its accountability and strategic allocation. These findings highlight the need for synergy between local institutional quality, fiscal effectiveness, and investment characteristics to achieve sustainable agricultural development in underdeveloped regions (La Fariki et al., 2024; Jaya et al., 2024).

International research also confirms that economic growth does not necessarily reduce poverty unless accompanied by equitable distribution and stronger sectoral institutions (Shi and Huang, 2023; Megbowon & Mulatu, 2025). On the other hand, several studies conclude that FDI can contribute positively to local development if it targets productive sectors and has a long-term orientation (Anetor, 2025). However, most of these studies remain at the national or inter-provincial aggregate level and fail to comprehensively examine the simultaneous influence of investment, fiscal transfers, and sectoral outcomes at the local level.

The research gap arises from the lack of studies that simultaneously and sectorally examine the relationships among investment (FDI and DI), fiscal funds (RSF), agricultural sector growth, and rural poverty—particularly in primary sector-dependent regions such as Southeast Sulawesi. Most of the existing literature adopts partial approaches, overlooking the structural interactions between variables within a comprehensive analytical framework. In addition, few studies place the agricultural sector as a mediating channel in the transmission of fiscal policy and investment to welfare, despite the fact that this sector employs a large labor force and forms the backbone of local economies (Hasddin et al., 2025c; Jasman et al., 2023; Yani et al., 2023).

***Research gap*:** While numerous studies have explored investment, fiscal transfers, economic growth, and poverty, several critical gaps remain. First, integrative and simultaneous approaches linking FDI, DI, and RSF to poverty through sectoral growth are still limited. Most studies examine these variables in isolation or in linear models, without mapping comprehensive causal pathways. For example, Hakim and Rosini (2022) assessed public and private investment's role in income inequality but fail to incorporate sectoral dynamics. Hatim and Hijrasil (2024) examined the impact of Regional Original Income and General Allocation Fund (GAF) on poverty in North Maluku, without considering real-sector mediation. Febriandika et al. (2022) also explored poverty determinants in Eastern Indonesia but omit sectoral linkages.

Second, few studies explicitly consider the agriculture, forestry, and fisheries sectors as explanatory variables connecting fiscal policy to community welfare (poverty). These sectors are crucial for poverty reduction, particularly in rural and resource-dependent areas. For example, Ainun et al. (2024) analyze the roles of agriculture and industry in poverty dynamics in South Sulawesi, but not as mediating channels between fiscal policy and welfare. Similarly, Megbowon and Mulatu (2025) underscore the significance of sectoral performance in poverty reduction but do not test the mediating roles of these sectors.

Third, methodological gaps persist, particularly the underuse of structural models such as SEM or path analysis. Such models can uncover direct and indirect effects between variables simultaneously, offering a deeper understanding of regional development dynamics. Most prior studies (e.g., Masnawaty et al., 2023; Walujadi et al., 2022) still rely on conventional regression or static panel models, which are less capable of capturing complex causal mechanisms.

Fourth, limited research uses longitudinal regional panel data to examine the dynamics of investment and fiscal transfers in poverty reduction—especially in regions like Southeast Sulawesi Province. This province, despite its resource wealth and significant FDI, DI, and RSF fluctuations between 2010-

2023, has seen stagnant poverty reduction alongside economic growth (Afiat et al., 2021; Breemer, 2024; Erlando et al., 2020). Most studies remain descriptive or cover narrow timeframes, missing long-term dynamics and structural relationships essential to understanding chronic poverty.

***Justification of the study*:** This study builds a comprehensive framework by integrating investment and fiscal transfer variables, positioning agriculture, forestry, and fisheries as mediating sectors, and applying a structural model with long-term panel data. By focusing on Southeast Sulawesi, the study offers empirical and conceptual contributions to formulating more evidence-based, contextual regional development policies.

This research addresses the gap through theoretical, methodological, empirical, and policy contributions. Theoretically, it enriches the growth-poverty nexus by introducing a sectoral perspective as an intervention pathway, extending works like Chakraborty (2025) and Otsuka (2021) on the synergy of fiscal policy and sectoral growth in welfare improvement.

Methodologically, the use of path analysis/SEM allows simultaneous testing of complex variable relationships, offering a more robust measurement of investment and fiscal policy effectiveness at regional levels—an area still underexplored in the literature.

Empirically and conceptually, this study highlights Southeast Sulawesi's unique geographical and structural characteristics, making the findings highly transferable to other Eastern Indonesian regions or similar developing economies. From a policy standpoint, it provides a data-driven framework for designing more targeted, inclusive, and sustainable sectoral and fiscal strategies, supporting long-term poverty alleviation based on local potential.

This conceptual mapping is presented in Figure 1 as a visual aid to emphasize the position and uniqueness of the approach used in this study.

***Research novelty and position in the literature*:** The novelty of this study lies in the integration of simultaneous and sectoral approaches in analyzing the relationship between investment (both Foreign Direct Investment and Domestic Direct Investment), fiscal transfers (especially Revenue Sharing Funds), sectoral growth (especially the agriculture, forestry, and fisheries sectors), and their impacts on poverty levels at the regional level.

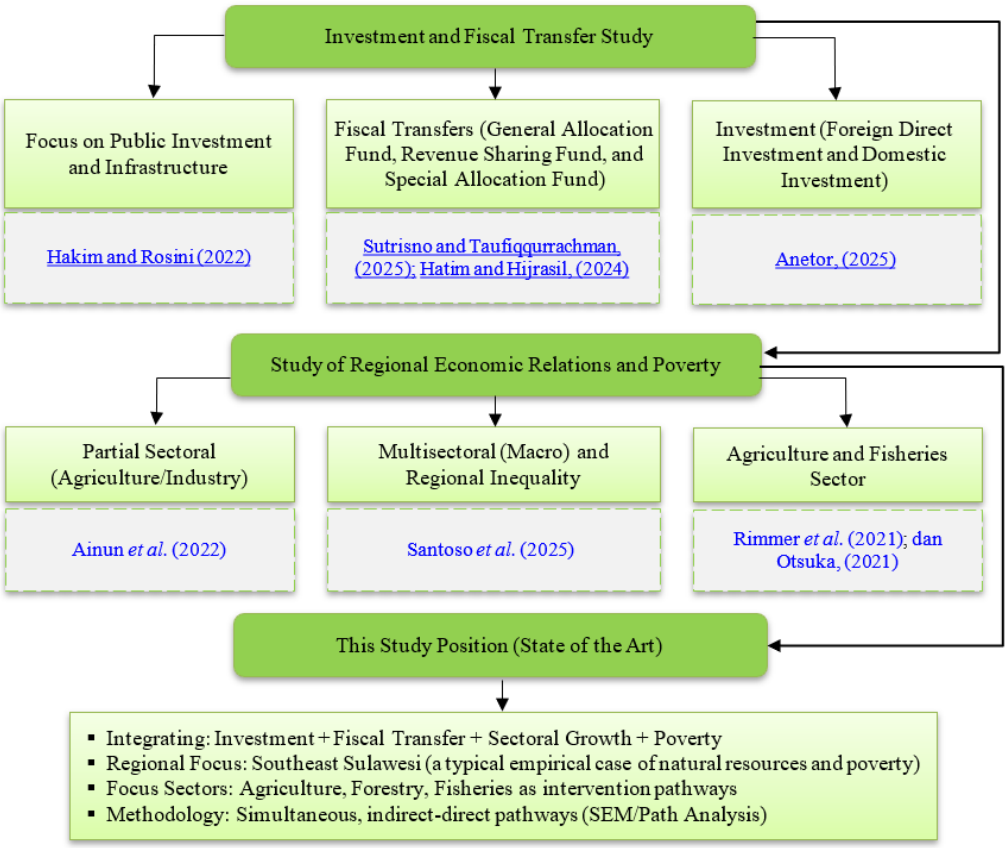
Investment and Fiscal Transfer Study
Focus on Public Investment and Infrastructure
Fiscal Transfers (General Allocation Fund, Revenue Sharing Fund, and Special Allocation Fund)
Investment (Foreign Direct Investment and Domestic Investment)
Hakim and Rosini (2022)
Sutrisno and Taufiqqurrachman, (2025); Hatim and Hijrasil, (2024)
Anetor, (2025)
Study of Regional Economic Relations and Poverty
Partial Sectoral (Agriculture/Industry)
Multisectoral (Macro) and Regional Inequality
Agriculture and Fisheries Sector
Ainun et al. (2022)
Santoso et al. (2025)
Rimmer et al. (2021); dan Otsuka, (2021)
This Study Position (State of the Art)
Integrating: Investment + Fiscal Transfer + Sectoral Growth + Poverty
Regional Focus: Southeast Sulawesi (a typical empirical case of natural resources and poverty)
Focus Sectors: Agriculture, Forestry, Fisheries as intervention pathways
Methodology: Simultaneous, indirect-direct pathways (SEM/Path Analysis)

Figure 1. Conceptual Map of Literature Related to Investment, Fiscal Transfers (Revenue Sharing Funds), Sectoral Growth, and Poverty.

Theoretically, this study extends the growth-poverty nexus model by placing the agricultural sector as a crucial mediator variable. This approach is still rarely adopted in national and regional literature, especially in the context of regional development inequality based on natural resources such as eastern Indonesia.

Methodologically, this study prioritizes a quantitative approach based on path analysis or structural equation modeling (SEM) which allows the analysis of direct and indirect effects between variables. This approach has not been widely applied in previous studies, most of which are still partial and sectoral. For example, studies by Febriandika et al. (2022), Hakim & Rosini (2022), and Ainun et al. (2024) tend to analyze the linear effect of investment or fiscal transfers on poverty without considering sectoral channels as intermediaries.

From a policy perspective, the main contribution of this study is to provide an empirical basis for the development of more targeted and contextual evidence-based policies in efforts to alleviate structural poverty. By combining the dynamics of public and private investment and the effectiveness of fiscal transfers, the results of this study are expected to be a reference in formulating more inclusive and sustainable sectoral development strategies, especially in rural areas that depend on natural resources.

The selection of Southeast Sulawesi Province as the study location is based on three main characteristics: (i) high dependence on the primary sector; (ii) sharp fluctuations in FDI, DI, and RSF during 2010-2023 (Breemer, 2024); and (iii) stagnation in poverty reduction despite positive economic growth (Afiat et al., 2021; Erlando et al., 2020). These conditions make the province a representative case study to evaluate the effectiveness of fiscal and investment instruments in driving sectoral growth that has an impact on poverty reduction.

Furthermore, this study fills a gap in the literature by offering a sectoral approach focused on the agriculture, forestry, and fisheries sector, a sector that has been empirically proven to have a significant impact on long-term poverty alleviation (Otsuka, 2021; Rimmer et al., 2021; Megbowon & Mulatu, 2025), but has rarely been analyzed simultaneously with fiscal and investment policy instruments. Thus, the original contribution of this study lies not only in strengthening the conceptual and methodological framework, but also in its empirical relevance in synergizing sectoral growth and the poverty alleviation agenda systematically in underdeveloped and natural resource-based regions.

Based on the preliminary review, research gaps, and state of the art, this study specifically aims to fill the gap in previous research by empirically analyzing the effect of Foreign Direct Investment (FDI), Domestic Investment (DI), and Revenue Sharing Funds (RSF) on the Gross Regional Domestic Product (GRDP) of the agriculture, forestry, and fisheries sector, and its implications for rural poverty levels in Southeast Sulawesi Province. Through a sectoral and simultaneous approach, this study evaluates how the three instruments contribute to increasing agricultural sector productivity and reducing poverty collectively.

Specifically, this study aims to analyze the influence of foreign investment, domestic investment, and fiscal transfers (profit sharing funds) on the growth of the agriculture, forestry, and fisheries sectors, and their impact on poverty levels in Southeast Sulawesi Province. Using a sectoral and simultaneous approach, this study evaluates both direct and indirect relationships between variables to gain a deeper understanding of the effectiveness of development instruments in the context of natural resource-based rural areas.

Through testing these hypotheses, this study is expected to produce a comprehensive understanding of the relative and collective contributions of foreign investment, domestic investment, and fiscal transfers. This understanding is important to explain how the three instruments play a role in strengthening the productivity of the agricultural sector and encouraging inclusive development in disadvantaged rural areas.

MATERIALS AND METHODS

***Location and time of research*:** This research was conducted using secondary data obtained from official agencies in Southeast Sulawesi Province. The research location was chosen purposively because Southeast Sulawesi Province is a relevant area to explore the dynamics of the relationship between investment (both foreign and domestic), fiscal transfers, economic growth, and poverty. This research was conducted in the period from December 2024 to February 2025.

The selection of Southeast Sulawesi Province as the research location is based on strategic and theoretical considerations that are relevant to the focus of the study of the relationship between investment, fiscal transfers, sectoral economic growth, and poverty in rural areas. According to Crescenzi and Rodríguez-Pose (2011), cases such as Southeast Sulawesi Province can be selected purposively because they reflect complex and contradictory empirical conditions, which are very important in the approach to studying regional development and fiscal distribution.

There are four main reasons that strengthen Southeast Sulawesi's position as a representative study case. First, the Dominance of the Primary Sector Economy Based on Rural Areas. The economic structure of Southeast Sulawesi has historically been supported by the agriculture, forestry, and fisheries sectors. This dependency makes the province sensitive to changes in investment allocation and fiscal transfers, in accordance with the theory of sector-led development and the distribution of regional fiscal resources (Todaro & Smith, 2020).

Second, Status as a National Mining Strategic Area. Southeast Sulawesi is one of the national mining centers, especially in the nickel, laterite, and other mineral subsectors. The presence of large-scale extractive industries has created economic dualism: on the one hand, it brings in large amounts of FDI/DI, but on the other hand, it causes distortions in fiscal distribution and sectoral inequality (Breemer, 2024; Erlando et al., 2020). Within the framework of the resource curse hypothesis, regions with high mining wealth often experience a development paradox, where economic growth does not necessarily reduce poverty evenly.

Third, Significant Fluctuations in Investment and Fiscal Transfer Funds. Based on historical data from 2010-2023, Southeast Sulawesi experienced high volatility in the realization of FDI, DI, and RSF. This instability reflects the dynamics of fiscal politics and regional institutions, which affect the effectiveness of productive sector investment management (Breemer, 2024). This situation is an ideal context for testing the coherence between fiscal policy and sectoral development.

Fourth, Stagnation in Poverty Reduction Despite Positive Economic Growth. The poverty rate in Southeast Sulawesi remains relatively high even though GRDP growth shows a positive trend. This illustrates the failure of the trickle-down effect and has the potential to indicate fragmentation between growth and welfare, as explained in the inclusive growth literature (Ravallion, 2016).

Therefore, the combination of dependence on the primary sector, dominance of the mining industry, fiscal fluctuations, and the growth-poverty paradox make Southeast Sulawesi a natural policy lab to evaluate whether FDI, DI, and RSF are able to drive inclusive and equitable sectoral growth in rural areas of Eastern Indonesia.

***Research approach and design*:** This study uses a quantitative approach with descriptive and causal designs. The quantitative approach was chosen because it is appropriate for testing the relationship between variables through numerical data that is analyzed statistically. Descriptive design is used to describe the characteristics of the research variables, while causal design aims to test the influence between independent variables (exogenous), mediating variables (partial endogenous), and dependent variables (fully endogenous).

The analysis method used is Structural Equation Modeling based on Partial Least Square (PLS-SEM), which is considered more flexible to data with non-normal distribution and small to medium sample sizes (Hair et al., 2017). This approach is considered appropriate because it allows simultaneous analysis between causal relationships and latent variable indicators more comprehensively (Hayes, 2018).

***Research variables and indicators*:** This study measures five main variables, namely Foreign Investment (FDI); Domestic Investment (DI); Revenue Sharing Fund (RSF); GRDP Value of the Agriculture, Forestry, and Fisheries Sector; and Poverty Level. Conceptually presented in Figure 2.

The variable indicators are described based on official data from the Central Statistics Agency, the Ministry of Finance, and the Regional Financial and Asset Management Agency of Southeast Sulawesi Province, which covers annual data for the period 2009-2023. The complete variables and indicators are presented in Table 1.

***Types and techniques of data collection*:** The type of data used in this study is secondary time series data for 10 years, starting from 2009 to 2023. This data was obtained from official publications of government agencies, such as the Central Statistics Agency, the Ministry of Finance, and the Financial and Regional Asset Management Agency of Southeast Sulawesi Province.

Data were collected through documentation studies and literature studies, including statistical reports, scientific journals, development economics textbooks, and central and regional government publications. This technique aims to obtain accurate and reliable numerical data in answering the problem formulation and testing the research hypothesis.

Data analysis techniques: Descriptive statistics are used to present data in the form of averages, standard deviations, and data distributions for each variable. This provides an initial overview of the characteristics of the data being studied (Sekaran & Bougie, 2016).

SEM-PLS analysis is carried out through two main stages as reviewed below:

a. Evaluation of the Measurement Model (Outer Model). The measurement model aims to test the validity and reliability of the instrument:
   a) Convergent validity: evaluated through a loading factor value > 0.7, although values between 0.5-0.6 are still acceptable at the exploration stage (Hair et al., 2021);
   b) Discriminant validity: tested through cross loading and Fornell-Larcker Criterion; and
   c) Construct reliability: measured using Cronbach's Alpha and Composite Reliability, with a minimum threshold value of 0.70.
b. Evaluation of the Structural Model (Inner Model). This evaluation includes:
   a) Coefficient of Determination (R^2): Assessing the predictive power of the model. Values of 0.75 (strong), 0.50 (moderate), and 0.25 (weak) (Hair et al., 2017);
   b) Effect Size (f^2): Determines the relative contribution of each construct in explaining the dependent variable (cut-off: 0.02 = small, 0.15 = medium, 0.35 = large).
   c) Collinearity Test (VIF): VIF < 5 indicates no multicollinearity;

d) Goodness of Fit (GoF): Combines the average communality and R^2 values. GoF values are 0.1 (weak), 0.25 (moderate), and 0.36 (strong).

***Hypothesis testing*:** The hypotheses in this study are classified into two main categories, namely direct testing (partial) and simultaneous testing (simultaneous). Direct testing aims to evaluate the effect of each independent variable on the dependent variable separately, while simultaneous testing is designed to assess the collective effect of several variables on a particular variable simultaneously in one analytical model.

These relationships are visualized in Figure 2, which displays the logical flow of the conceptual framework and the direction of hypothesis testing that underlies the analytical design of this study.

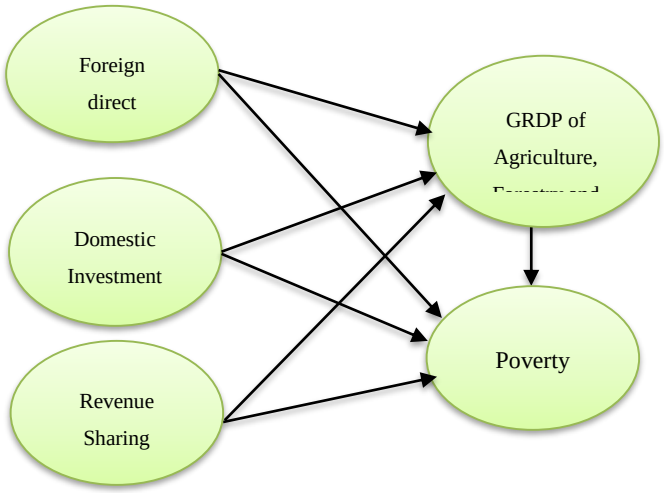

Figure 2. Conceptual Model and Research Hypothesis.

As seen in Figure 1, it is assumed that Foreign Direct Investment (FDI) has a positive and significant influence on Gross Regional Domestic Product (GRDP) in the Agriculture, Forestry, and Fisheries sector in Southeast Sulawesi Province (H1). Likewise, Domestic Investment (DI) is estimated to have a positive and significant influence on the GRDP of the sector (H2). In addition, Revenue Sharing Fund (RSF) as a fiscal instrument are expected to encourage the growth of the agricultural sector by increasing regional fiscal capacity (H3). In the context of poverty alleviation, it is assumed that increasing GRDP in the agriculture, forestry, and fisheries sector will reduce the poverty rate (H4). Furthermore, FDI, DI, and RSF are each assumed to have a negative and significant influence on poverty in the region (H5, H6, and H7).

To test the collective or simultaneous influence, this study also proposes two simultaneous hypotheses. First, it is assumed that FDI, DI, and RSF together have a significant effect on GRDP in the Agriculture, Forestry, and Fisheries sectors in Southeast Sulawesi Province (H8). Second, the combination of the three variables is also expected to have a significant effect on the level of poverty in rural areas (H9). This hypothesis test is designed to provide a comprehensive understanding of how the combination of investment and fiscal transfers affects the productivity of the agricultural sector and its contribution to reducing poverty in rural areas.

Testing was carried out using the bootstrapping method in SmartPLS 3.0 software to obtain t-statistic and p-value values at a significance level of 5% ($\alpha = 0.05$). The hypothesis is said to be accepted if the t-statistic value is > 1.96 and the p-value is < 0.05 (Hair et al., 2021).

This model emphasizes understanding direct and simultaneous relationships, not mediation, so that GRDP is positioned as a dependent variable in one part of the model and as a predictor in the other part, without bridging the relationship between exogenous variables and poverty.

RESULTS

***SEM-PLS model specification*:** Based on your 9 hypotheses (H1-H9), the SEM model can be divided into two inner models (structure of relations between constructs) as follows. Model 1 is GRDP as an endogenous variable. The objective is to measure the direct influence of FDI, DI, and RSFon GRDP in the agriculture, forestry, and fisheries sectors. The specifications are:

Exogenous (X): X1 = Foreign Direct Investment (FDI); X2 = Domestic Investment (DI); and X3 = Revenue Sharing Fund (RSF). Endogenous (Y) = GRDP in the Agriculture, Forestry, and Fisheries Sector.

Hypothesis:

H1: X1 → Y (positive & significant)
H2: X2 → Y (positive & significant)
H3: X3 → Y (positive & significant)
H8: (X1, X2, X3) → Y (simultaneous effect).

Model 2 uses poverty as an endogenous variable. The objective is to measure the direct influence of FDI, DI, RSF, and GRDP on poverty. The specifications are

Exogenous (X) with X1 = Foreign Direct Investment (FDI); X2 = Domestic Investment (DI); X3 = Revenue Sharing Fund (RSF); and Y = GRDP of the agricultural sector (output from model 1). Endogenous (Y) = Poverty (number of poor people). The hypotheses are:

H4: Z → Y (negative & significant)
H5: X1 → Y
H6: X2 → Y
H7: X3 → Y
H9: (X1, X2, X3) → Y (simultaneous effect).

Outer model evaluation: In the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, the evaluation of the outer model or measurement model is carried out to assess the extent to which the indicators are able to represent the latent constructs being measured, both in

Table 1. Research Variables and Indicators.

Year	Amount of FDI (USD Million)	Amount of DI (Million Rupiah)	Amount of RSF (Million Rupiah)	GRDP Value of Agriculture, Forestry, and Fisheries Sector (Million Rupiah)	Number of Poor People (thousand People)
2009	0	0	59,000.00	3,564,767.39	434
2010	0	19	71,842,000.00	1,536,652.50	400
2011	370.40	59	81,738,000.00	1,572,931.40	330
2012	35.70	907	102,125,000.00	1,676,899.20	316
2013	86	1,281	116,089,000.00	1,383,894.60	332
2014	0	1,249	123,631,000.00	1,481,656.70	314
2015	145	2,015	121,027,000.00	1,493,074.50	322
2016	376	1,794	106,808,000.00	1,573,684.79	327
2017	693	3,148	71,385,000.00	1,643,269.53	332
2018	672	1,603	94,832,000.00	1,708,894.39	308
2019	987	3,827	123,841,000.00	1,773,940.00	303
2020	1,286	2,865	238,299,000.00	1,774,220.00	302
2021	1,616	4,334	182,768,000.00	1,811,090.00	319
2022	877	7,596	131,977,000.00	1,803,950.00	310
2023	448	7,734	142,679,000.00	1,829,720.00	322

reflective and formative forms. This evaluation generally includes testing convergent validity (through loading factor values and average variance extracted or AVE), internal reliability (such as composite reliability and Cronbach's alpha), and discriminant validity between constructs (Hair et al., 2021).

Given that all variables in this study are single-item observed variables, an outer model evaluation was not conducted. This model does not use multidimensional latent constructs, so testing of outer loading, AVE, composite reliability, or discriminant validity—such as the Fornell-Larcker criteria—is irrelevant (Ghozali & Latan, 2015). Therefore, the analysis focuses directly on the evaluation of the inner model, which aims to assess the strength and direction of the causal relationship between variables in the model structure.

***Inner model*:** After ensuring that the model does not require an outer model evaluation because all variables in this study are single-item variables, the analysis process is directed to the inner model or structural model evaluation stage. This evaluation aims to examine the strength and direction of the causal relationship between constructs in the previously formulated model (Hair et al., 2021).

In the PLS-SEM approach, the evaluation of the inner model is generally carried out through several main indicators, namely: a) Path coefficients, which indicate the direction and magnitude of the direct influence of exogenous variables on endogenous variables; b) The t-statistic and p-value values generated through the bootstrapping process, to test the statistical significance of each influence in the structural path; c) The R^2 (R-square) value, which is used to assess how much variability in endogenous variables can be explained by exogenous variables in the model; d) Simultaneous hypothesis evaluation, to test the collective or combined influence of several constructs on one target variable.

In the context of this study, the evaluation of the inner model focuses on nine main hypotheses (H1-H9), which test the direct and simultaneous effects of investment and fiscal transfer variables on agricultural sector growth and poverty levels in rural areas. The evaluation of the inner model is carried out through analysis of path coefficients, t-statistic values, and p-value significance for each influence path.

Meanwhile, the R^2 value as an indicator of the predictive strength of endogenous variables will be presented separately, in order to provide a quantitative picture of the collective contribution of independent variables to changes in the dependent variable.

The complete results of the inner model evaluation are presented in Table 2, which summarizes the influence paths between variables, coefficient magnitudes, significance tests, and decisions on each hypothesis.

Table 2 presents the results of hypothesis testing in the structural model (inner model) with the PLS-SEM approach. The evaluation was conducted on nine influence paths (H1-H9), which reflect the causal relationship between investment (FDI and DI), fiscal transfer (RSF), sectoral growth (GRDP in the agriculture, forestry, and fisheries sectors), and poverty. H1 and H2 are accepted, where Foreign Direct Investment (FDI) and Domestic Investment (DI) have a positive and significant influence on GRDP in the agriculture, forestry, and fisheries sectors, with path coefficients of 0.301 ($p = 0.044$) and 0.666 ($p = 0.000$), respectively. These results support the hypothesis that investment contributes to sectoral growth in rural areas.

H3 is rejected, where the Revenue Sharing Fund (DBH) does not show a significant effect on the primary sector GRDP (p

Table 2. Inner Model Evaluation Results: Path Coefficients, Significance Tests, and Hypothesis Decisions.

Hypothesis	Path of Influence	Path coef.	t-statistic	Sig. t	Results
H1	FDI → GRDP-Agriculture, Forestry and Fisheries Sector	0.301	2.017	0.044	Accepted
H2	DI → GRDP-Agriculture, Forestry and Fisheries Sector	0.666	4.853	0.000	Accepted
H3	RSF → GRDP-Agriculture, Forestry and Fisheries Sector	0.136	1.165	0.244	Rejected
H4	GRDP-Agriculture, Forestry and Fisheries Sector → Poverty	-1.199	1.549	0.122	Rejected
H5	FDI → Poverty	0.397	0.793	0.428	Rejected
H6	DI → Poverty	0.640	1.091	0.276	Rejected
H7	RSF → Poverty	-0.500	1.547	0.122	Rejected
H8	FDI, DI, RSF → GRDP-Agriculture, Forestry and Fisheries Sector	0.702	5.102	0.000	Accepted
H9	FDI, DI, RSF → Poverty	-0.312	1.214	0.226	Rejected

= 0.244). This finding may reflect the less than optimal use of fiscal transfer funds in supporting the productivity of the agricultural sector directly.

H4, H5, H6, and H7 are rejected, where no significant influence of the variables GRDP, FDI, DI, or RSFon the poverty rate is found. The negative coefficient on the path PDRB → Poverty (-1.199) does show the expected direction, but is not statistically significant (p = 0.122). This indicates that sectoral growth has not been strong enough to directly reduce poverty rates in the region.

H8 is accepted where FDI, DI, and DBH simultaneously have a significant effect on GRDP in the agricultural sector (collective coefficient = 0.702; p = 0.000). This indicates the collective power of investment and fiscal transfers on sectoral economic growth.

H9 is rejected where the combination of PMA, PMDN, and DBH does not have a significant effect on poverty (p = 0.226), confirming that investment interventions have not been effective enough in penetrating structural barriers to poverty in the study area.

These findings reinforce contemporary literature highlighting the importance of effective use of regional investment and fiscal instruments in driving sectoral growth (Rodríguez-Pose & Garcilazo, 2015; Allain-Dupré et al., 2020). However, these findings also emphasize the significant challenges in ensuring that growth is truly inclusive and able to reduce inequality, as stated by Ravallion (2016). In the context of Southeast Sulawesi, this requires the formulation of more targeted and responsive policies so that the benefits of economic growth can be felt in real terms by poor households.

After evaluating the significance of the relationship between variables in the inner model, the predictive ability of the model is analyzed through the coefficient of determination (R^2) value. The R^2 value indicates the proportion of endogenous variable variability that can be explained by exogenous variables in the model. Table 3 below presents the R^2 value for each endogenous variable,

Table 3 shows the results of the evaluation of the predictive ability of the structural model in explaining the variation of two main endogenous variables, namely the GRDP of the agriculture, forestry, and fisheries sector and the poverty rate in Southeast Sulawesi Province. The coefficient of determination (R^2) value is used to assess the collective contribution of exogenous variables in explaining the dependent variable, as recommended in the PLS-SEM approach (Hair et al., 2021).

Table 3. Value of Determination Coefficient (R^2) of Endogenous Variables in the Structural Model.

Endogenous Variables	R^2	Keterangan
GRDP - Agriculture, Forestry and Fisheries Sector	0.702	Can be explained 70.2% by FDI, DI, and RSF
Poverty	0.461	Can be explained 46,1% by FDI, DI, RSF, dan GRDP - Agriculture, Forestry and Fisheries Sector

PDRB - Sektor Pertanian, Kehutanan, dan Perikanan (R^2 = 0.702)

The R^2 value of 0.702 indicates that around 70.2% of the variation in GRDP in the agriculture, forestry, and fisheries sector can be explained simultaneously by three main independent variables, namely PMA (Foreign Investment), PMDN (Domestic Investment), and DBH (Revenue Sharing Fund). In the classification of Hair et al. (2021), an R^2 value above 0.67 is categorized as strong, indicating that the model has a high predictive ability for the performance of the primary sector.

These results support the hypothesis that investment, both foreign and domestic, and regional fiscal allocation play an important role in driving sectoral economic growth in natural resource-based regions such as Southeast Sulawesi. This finding is in line with the classic literature on the sectoral-led development approach (by Lewis and Hirschman), which emphasizes that capital increases and public spending are the main drivers of primary sector productivity in developing regions. This alignment is also reflected in contemporary literature that highlights the importance of strengthening productive sectors as the main drivers of regional economic growth and reducing inequality (Timmer, de Vries & de Vries, 2015; McMillan et al., 2017; UNIDO, 2022).

Poverty Rate (R^2 = 0.461)

Meanwhile, the R^2 value of 0.461 for the poverty variable indicates that the combination of FDI, DI, RSF, and GRDP can only explain 46.1% of the variation in poverty levels. In the PLS-SEM evaluative scale, this value is in the medium category (Hair et al., 2021). This means that there is around 53.9% of the poverty variance that is not explained by the variables in this model, and is likely influenced by other factors that are more structural or sociocultural, such as inequality in asset distribution, quality of social infrastructure, financial literacy, or household resilience.

These findings suggest that although agricultural sector investment and growth have increased statistically, the direct effect on poverty reduction has not been optimal, which reinforces the views in the growth-without-equity (Ravallion, 2016) and pro-poor development (Todaro & Smith, 2020) literatures. This may also reflect the classic phenomenon of trickle-down failure, where economic growth does not automatically reduce poverty rates if it is not accompanied by inclusive distribution policies.

DISCUSSION

***H1: Foreign Direct Investment (FDI) Plays a Significant Role in GRDP in the Agriculture, Forestry, and Fisheries Sector*:** The research findings show that Foreign Direct Investment (FDI) has a positive and significant effect on Gross Regional Domestic Product (GRDP) in the agriculture, forestry, and fisheries sector in Southeast Sulawesi Province ($\beta = 0.301$; $p = 0.044$). This indicates that the influx of foreign capital, although on a limited scale, has made a real contribution to increasing the output of the primary sector. FDI has the potential to strengthen the productive sector through technology transfer, opening up international market access, and improving logistics infrastructure and value chains, as explained by Anetor (2025) and Otsuka (2021).

Specifically, the fisheries and marine aquaculture sectors—such as seaweed and reef fish—have benefited directly from the presence of FDI, particularly through the strengthening of post-harvest systems, cold storage infrastructure, and the improvement of export product quality (Rimmer et al., 2021). This is especially relevant to the geographic characteristics of Southeast Sulawesi, which has a 1,740 km coastline and coastal areas rich in potential, yet previously constrained by limited domestic investment (Statistics Indonesia of Southeast Sulawesi Province, 2024b).

Support for the importance of the role of external sector investment is also reflected in the findings of Afiat et al. (2021) which states that the formation of domestic fixed capital and productive population are significant determinants of regional economic growth in Southeast Sulawesi. Meanwhile, Breemer (2024) emphasized that improving the welfare of coastal communities is not enough only through aid programs, but needs to be driven by productive investment that creates a multiplier effect on employment and household income.

In this context, the sectoral-led investment approach is becoming increasingly relevant, in line with contemporary literature on structural transformation and growth based on leading sectors (Timmer, de Vries, & de Vries, 2015; McMillan & Sepúlveda, 2017; UNIDO, 2022). In other words, these results reinforce the importance of FDI not only as a source of financing, but also as an instrument for regional development and reducing spatial inequality in provinces with a high level of economic dependence on natural resources such as Southeast Sulawesi.

***H2: Domestic Investment (DI) Plays a Significant Role in GRDP in the Agriculture, Forestry, and Fisheries Sector*:** The path coefficient of Domestic Investment (DI) to GRDP in the primary sector was recorded at 0.666 with a high significance value ($p = 0.000$), which indicates that domestic investment plays a dominant role in driving the growth of the agriculture, forestry, and fisheries sector in Southeast Sulawesi. These sectors are still the backbone of the regional economy, especially with the existence of superior commodities such as rice, cocoa, corn, and non-timber forest products, which are widespread in districts such as Kolaka, Konawe, and Muna (Statistics Indonesia of Southeast Sulawesi Province, 2024b).

These results reinforce the literature that emphasizes the importance of local capacity and endogenous investment in driving regional growth based on domestic potential. Crescenzi and Rodríguez-Pose (2011) stated that the success of regional economic development is highly dependent on the internal capacity of the region to utilize investment as a productivity lever. In this context, DI tends to be more adaptive to local socio-economic and geographical conditions, and has a higher level of closeness to micro and medium business actors.

Wahyuni and Hariyanti's (2024) research also revealed that increasing DI contributed significantly to the growth of the agricultural subsector in various provinces in Indonesia, including in the eastern region. In this case, DI support for the development of food-based agriculture and community-based forestry in Southeast Sulawesi has shown a strong correlation with increasing productivity, added value, and local economic resilience. In fact, several regions in Southeast Sulawesi have begun to adopt investment schemes based on partnerships between farmers, cooperatives, and local governments as a strategy to expand the impact of DI.

This condition emphasizes the importance of encouraging inclusive and sustainable domestic investment, especially in primary sectors that are labor-intensive and closely linked to the economic structure of rural households. Within the framework of sectoral-led development, DI plays a key role as a driver of local structural transformation in Southeast Sulawesi, in line with the development agenda based on local

potential and an adaptive spatial approach (Timmer, de Vries, & de Vries, 2015; UNIDO, 2022).

***H3: Revenue Sharing Fund (RSF) Has No Effect on GRDP in the Agriculture, Forestry, and Fisheries Sector*:** The results of the analysis show that Revenue Sharing Fund (RSF) has no significant effect on Gross Regional Domestic Product (GRDP) in the agriculture, forestry, and fisheries sector in Southeast Sulawesi ($p = 0.244$), although the direction of the regression coefficient shows a positive relationship. This finding indicates that fiscal transfers from the central government to the regions have not been optimally directed to support productive activities in the primary sector. In other words, DBH tends not to provide direct contributions to sectoral output growth in this region.

This condition strengthens the arguments of Masnawaty et al. (2023) and Hidayat et al. (2024) that the effectiveness of fiscal policy is largely determined by the aspects of allocative design and governance at the regional level. Although the nominal allocation of DBH has increased, its impact on the productive sector is still limited if the funds are used more for operational and administrative expenditures than for capital expenditures or development of infrastructure supporting agriculture and forestry.

A structural factor that also explains the weak impact of DBH is the character of the primary sector in Southeast Sulawesi which is still dominated by small and medium-scale business actors, with low technological capacity and market access. Breemer (2024) noted that the tendency of local governments to prioritize routine spending such as employee salaries, official travel, and bureaucratic procurement has reduced fiscal space for strategic economic interventions, including downstream programs for agricultural and forestry commodities.

On the other hand, the weak integration between fiscal policy and sectoral development strategies has resulted in DBH allocation being unable to target the real needs of the agricultural and forestry sectors, such as irrigation, superior seeds, farmer training, or strengthening village cooperatives. In fact, this sector has great potential if supported by progressive fiscal policies based on spatial data. Thus, these results indicate the need for a more targeted reformulation of fiscal transfer policies, based on sectoral performance, and adjusted to the characteristics of the local economy in Southeast Sulawesi.

***H4: GRDP of Agriculture, Forestry, and Fisheries Sector is Not Significant to Poverty*:** The negative coefficient on the path between GRDP of agriculture, forestry, and fisheries sector to poverty level (-1.199) supports the theoretical assumption of trickle-down effect, which states that economic growth in productive sector will have positive impact in reducing poverty. However, this finding is not statistically significant ($p = 0.122$), thus indicating that sectoral growth has not automatically provided direct benefits to poor households in Southeast Sulawesi.

This phenomenon reflects the disconnection between the dynamics of sectoral growth and the structure of the distribution of community welfare, especially the lower economic groups. One of the main causes is the low involvement of poor households in the value chain of agricultural and fisheries sector production. Economic activities in these sectors are often concentrated on medium and large scale businesses, while small farmers and traditional fishermen are marginalized from access to capital, technology, and markets.

Ainun et al. (2024) highlighted that the unequal agrarian structure, weak bargaining power of farmers, and minimal access to financing and basic infrastructure are the main obstacles for poor households to be actively involved in the production and distribution process. As a result, although the primary sector GRDP increased, there was no significant increase in the real income of poor households.

This finding is in line with the study by Febriandika et al. (2022) which shows that poverty in eastern Indonesia, including Southeast Sulawesi, is not only influenced by the rate of economic growth, but also by spatial inequality, economic exclusion, and low connectivity between regions. In many cases, areas with high sectoral growth still have stagnant poverty rates because the distribution of economic benefits is uneven.

Thus, these results emphasize the need for sectoral development policies that are more inclusive and sensitive to local socio-economic structures. GRDP growth needs to be accompanied by strategies to empower poor communities, increase the productivity of small farmers, and agrarian reform that supports the redistribution of access to productive resources.

***H5: Foreign Direct Investment (FDI) is Not Significant to Poverty*:** The results of the analysis show that FDI has a positive relationship to the poverty rate ($\beta = 0.397$; $p = 0.428$), but is not statistically significant. Substantially, this finding indicates that FDI has not been able to play a role in reducing poverty rates in Southeast Sulawesi Province. In fact, the positive direction of the coefficient implies the potential risk that foreign investment can actually widen the income gap if it is not accompanied by a fair benefit distribution mechanism.

This finding is consistent with the research results of Agbo and Ugwu (2025), who emphasized that non-inclusive, capital-intensive, and extractive sector-oriented FDI tends to fail to create economic opportunities for the poor. In the context of Southeast Sulawesi, foreign investment patterns have so far been more focused on the mining sector and nickel-based downstream industries, which have low linkages with labor-intensive sectors such as agriculture and fisheries—two sectors that are the mainstay of the majority of the rural poor.

Vidriza and Talmera (2024) also noted that without inter-sectoral linkage policies and affirmative strategies that

facilitate the involvement of local actors, FDI is at risk of becoming an enclave economy—isolated from domestic economic networks and contributing little to poverty reduction. In many areas in Southeast Sulawesi, FDI does not create a significant multiplier effect on the local economy, either in the form of labor absorption, technology transfer, or inclusive infrastructure development.

Therefore, to ensure that FDI can contribute to poverty reduction, policies are needed that encourage vertical and horizontal integration between local leading sectors and foreign investment. This can be realized through local partnership obligations, strengthening domestic supply chains, and training local workers to be able to access economic opportunities from the presence of foreign investors. Without such reforms, FDI's contribution to the welfare of the poor will remain marginal.

***H6: Domestic Investment (DI) is Not Significant to Poverty*:** Domestic Investment (DI) is recorded to have a positive coefficient on poverty (β = 0.640), but is not statistically significant (p = 0.276). Although theoretically domestic investment can play an important role in supporting job creation and increasing income, these results indicate that the orientation of DI in Southeast Sulawesi has not been effective enough in reaching or empowering poor groups.

This interpretation leads to two main problems: first, the spatial distribution of DI has not targeted areas with high poverty rates, and second, sectoral allocation has not focused on labor-intensive sectors that can absorb labor from poor households. This is in line with the findings of Hatim and Hijrasil (2024) which emphasize that the effect of investment on poverty reduction is highly dependent on the target sector and its direct connection to vulnerable communities.

In the context of Southeast Sulawesi, domestic investment patterns are still dominated by the trade, construction, and transportation sectors (Statistics Indonesia of Southeast Sulawesi Province, 2024a). These sectors generally absorb formal middle-class workers who already have basic skills or certain certifications, so that access for poor groups—especially in rural and coastal areas—is limited. As a result, although the value of investment continues to increase, its contribution to reducing inequality and poverty remains low.

In addition, most domestic investment tends to be short-term oriented and focuses on asset accumulation or speculative activities in the service sector, rather than on increasing the productivity of more inclusive primary sectors. This mismatch indicates an urgent need to design domestic investment policies that are more responsive to the dimensions of spatial and social justice.

Thus, in order for domestic direct investment to become an effective instrument in poverty reduction, policy interventions are needed that are able to direct investment to strategic sectors such as agriculture, fisheries, small-scale agro-industry, and the village economy. Regional-based fiscal incentives, integration of poverty alleviation programs with local investment schemes, and increasing the capacity of regional institutions are key steps in optimizing the social impact of domestic direct investment.

***H7: Revenue Sharing Funds (RSF) is Not Significant on Poverty*:** The path estimation results between Revenue Sharing Funds (DBH) and poverty levels show a negative coefficient direction of -0.500, but it is not statistically significant (p = 0.122). Conceptually, DBH has the potential to strengthen regional fiscal capacity in funding social protection programs, local economic empowerment, and basic infrastructure development that favors the poor. However, this finding indicates that in practice, RSF allocation has not been fully strategically directed for poverty reduction purposes.

According to Allain-Dupré *et al.* (2020), the success of fiscal transfers in promoting inclusive development is highly dependent on cross-level government coordination (multi-level governance) and the existence of a performance-based incentive system. In the case of Southeast Sulawesi, the insignificant effect of DBH on poverty reduction can be attributed to the weak integration of fiscal policy with regional development programs that target the basic needs of vulnerable groups.

Furthermore, Chakraborty (2025) emphasized that without adequate institutional capacity at the local level, fiscal transfers tend to be used administratively without considering the efficiency and effectiveness of social impacts. In several districts in Southeast Sulawesi, regional planning and budgeting are still top-down, less based on spatial poverty data, and do not accommodate the active participation of the poor in program preparation.

As a result, although RSF has increased in nominal terms, its use has not had a direct impact on improving the welfare of poor households. The budget tends to be absorbed for routine spending and bureaucratic operations, while productive and inclusive spending—such as strengthening farmer cooperatives, access to basic health services, and rural infrastructure—is still minimal in proportion.

Thus, it is necessary to reformulate the RSF management approach so that it does not only emphasize the fiscal distribution aspect, but also pays attention to the effectiveness of funded programs and their socio-economic outcomes. Strengthening the poverty data-based planning system, performance-based monitoring, and cross-sector synergy are key to increasing DBH's contribution to poverty reduction in disadvantaged areas.

***H8: FDI, DI, and RSF Simultaneously Significantly Affect GRDP in the Agriculture, Forestry, and Fisheries Sector*:** The results of the analysis show that the simultaneous influence of FDI, DI, and RSF on GRDP in the agriculture, forestry, and fisheries sector is statistically significant, with a collective coefficient of 0.702 (p = 0.000). In addition, the R^2 value of 0.702 indicates that the three variables together are

able to explain 70.2% of the variation in primary sector growth in Southeast Sulawesi Province.

These findings provide strong evidence regarding the effectiveness of the combination of fiscal and investment policies as the main driver of natural resource-based sectoral development. In the context of Southeast Sulawesi, which is rich in agricultural and marine potential, the synergy between the role of the state through fiscal transfers (RSF) and business actors through investment (FDI and DI) is very crucial. Stand-alone interventions tend to have limited impacts, but when designed in an integrated and targeted manner, the combination can create a significant synergistic effect on the growth of output in the agricultural, forestry, and fisheries sectors.

Maddatuang et al. (2021) also stated that economic development in rural and agrarian areas requires a policy mix that is not only sectoral, but also cross-institutional. When investment policies are strengthened by a fair and responsive fiscal framework, regions are able to build production infrastructure, expand the capacity of local actors, and increase regional economic resilience.

In Southeast Sulawesi, the role of DI appears dominant in its contribution to sectoral growth, but the presence of FDI remains important in opening up innovation and access to global markets. Meanwhile, RSF plays a role as a fiscal supporter that enables local governments to carry out development functions more adaptively. Thus, these findings emphasize the need for a balanced policy design between investment liberalization and strengthening regional fiscal capacity.

A sectoral development strategy that simultaneously integrates these three instruments has the potential to address productivity challenges, increase local added value, and reduce growth disparities between regions in Southeast Sulawesi. Furthermore, this approach supports the achievement of inclusive sustainable development, especially in strategic sectors that are labor-intensive and based on local resources.

***H9: FDI, DI, and RSF Simultaneously Have No Significance on Poverty*:** In contrast to the findings on sectoral GRDP, the results of simultaneous tests on poverty variables show that Foreign Direct Investment (PMA), Domestic Direct Investment (PMDN), and Revenue Sharing Funds (DBH) collectively have no significant effect on reducing poverty levels in Southeast Sulawesi Province. The collective coefficient is negative (-0.312), but is not statistically significant ($p = 0.226$), with an R^2 value of 0.461. This means that only 46.1% of the variation in poverty levels can be explained by the three variables, while the rest is likely influenced by other structural and social factors.

These findings show the limitations of a growth-based approach if it is not accompanied by inclusive social policies and direct empowerment of the poor. Investment and fiscal policies are indeed important for driving the economy, but their impact on the poor is highly dependent on their design, implementation, and targeting. When investment is mostly absorbed by sectors that are not labor-intensive, and RSF is not strategically directed, its linkage to poverty reduction becomes weak.

Cilliers (2021) and the World Bank (2023) emphasized that long-term poverty reduction in developing regions is greatly influenced by the quality of education, basic infrastructure such as sanitation and clean water, and increasing the competitiveness of the local workforce. In Southeast Sulawesi, these challenges are still major obstacles, especially in coastal and mountainous areas that have not been fully reached by adequate public services.

Furthermore, the insignificance of this simultaneous influence also indicates a fragmentation of policies between the economic and social sectors. Investment and fiscal policies have not been fully integrated with social protection programs, improving job skills, or strengthening people's economic institutions. As a result, the growth achieved does not automatically result in equal distribution of welfare, let alone sustainable poverty reduction.

Thus, these results are a strong argument for designing a hybrid regional development model, namely combining economic instruments with adaptive social and institutional approaches. In the future, public and private investments must be designed to create downward linkages that allow poor groups to gain direct benefits through job creation, market access, and increased productive assets.

***Conclusion*:** This study shows that investment—both foreign (FDI) and domestic (DI)—has a positive influence on the growth of the agriculture, forestry, and fisheries sectors in Southeast Sulawesi Province. DI is the most significant factor ($\beta = 0.666$; $p = 0.000$), followed by FDI ($\beta = 0.301$; $p = 0.044$), while Revenue Sharing Funds (RSF) are not individually significant on the primary sector GRDP ($p = 0.244$). However, a simultaneous test of the three variables (H8) shows a very significant influence on sectoral growth with a determination value (R^2) reaching 70.2%, confirming the effectiveness of the policy mix between investment and fiscal decentralization.

On the other hand, when associated with poverty reduction (H4-H9), neither FDI, DI, RSF, nor sectoral GRDP show a significant influence. Although there is a negative coefficient on the GRDP path to poverty, the result is not significant ($p = 0.122$), indicating that sectoral growth is not yet inclusive. This is reinforced by the finding that FDI and DI actually have a positive coefficient direction on poverty, although not statistically significant. The simultaneous results (H9) also confirm that the combination of the three variables only explains 46.1% of the variation in poverty levels ($R^2 = 0.461$).

***Theoretical implications*:** Theoretically, these findings contribute to the understanding of the limitations of the growth-based approach in addressing poverty in natural

resource-based regions. While supporting the sectoral-led development framework and trickle-down effect, these results also challenge the classical assumption that sectoral growth will automatically reduce poverty. This study expands the academic discourse by emphasizing the importance of integrating fiscal policy, investment, and more inclusive economic empowerment strategies, especially in the context of eastern Indonesia which still faces structural and spatial challenges.

***Practical/Policy implications*:** These findings have a number of important policy implications. First, investment planning should be directed not only at driving sectoral growth, but also at creating direct linkages with the poor, through strengthening local value chains, involving MSMEs, and increasing workforce capacity. Second, the design of Revenue Sharing Fund allocation needs to be improved by considering sectoral performance indicators and the spatial dimension of poverty, as well as strengthening the capacity of regional fiscal planning and management. Third, a hybrid development approach—combining economic interventions with social and institutional policies—needs to be developed to ensure that the resulting growth can be enjoyed equally by all levels of society.

In the future, regional development agendas such as Southeast Sulawesi require policy integration that balances growth, equity, and empowerment. Only then can structural transformation go hand in hand with sustainable poverty reduction.

***Research limitations*:** Although this study provides important empirical insights into the relationship between investment, fiscal transfers, sectoral growth, and poverty in Southeast Sulawesi Province, there are several limitations that need to be acknowledged.

First, limitations arise in the type and scope of data used. This study relies on annual aggregate data at the provincial level, so it is unable to capture spatial variations between districts/cities or socio-economic characteristics at the household level. Consequently, the results of the analysis do not fully reflect internal regional inequality or the distribution of development benefits between social groups.

Second, all variables in the model are measured using a single-indicator approach, which limits the ability to measure constructs comprehensively. This approach does not allow for the evaluation of latent aspects of complex phenomena such as fiscal effectiveness, the quality of public spending, or the sustainability of investment.

Third, the analysis model is directly linear and has not considered relevant mediating or moderating variables. In fact, contemporary literature has emphasized the importance of including intermediary variables such as labor productivity or institutional moderation, village infrastructure, and social spending in explaining the relationship between economic growth and poverty reduction (Ravallion, 2016; Cilliers, 2021). The absence of these elements has the potential to weaken the depth of structural explanation of the model used.

Fourth, the sectoral focus in this study is still aggregate, combining the agriculture, forestry, and fisheries sectors into one analysis entity. In fact, each of these subsectors has very different investment characteristics, productivity levels, labor patterns, and socio-economic impacts. For example, commercial forestry tends to be capital intensive and concession-based, while community capture fisheries are more labor intensive and socially vulnerable.

***Recommendations (suggestions) for further research*:** Based on a number of limitations that have been identified, the direction of future research development needs to be directed towards a more holistic, contextual, and region-based approach.

First, further studies are advised to adopt more granular spatial and longitudinal data, such as district/city or even village-level panel data, in order to capture regional heterogeneity and the influence of policies more precisely. This approach also opens up opportunities to integrate geospatial methods in analyzing inter-sector connectivity and spatial inequality between regions.

Second, the analysis model can be expanded through the development of multidimensional latent constructs using reflective or formative PLS-SEM approaches, with multiple indicators for variables such as investment effectiveness, fiscal governance quality, or social inclusion levels. This effort will not only improve the conceptual validity and theoretical exploratory power of the model, but also strengthen the diagnostic capacity of the complex interactions between development variables. Therefore, further research with a more distributed and spatial sectoral approach is needed to provide a sharper understanding of the complexity of development in eastern Indonesia, which has tended to lag behind in the reach and effectiveness of national policies.

Third, it is important to include socio-economic mediating and moderating variables to explain the transmission mechanism between growth and welfare. Variables such as labor productivity, human development index (HDI), access to credit, and fiscal allocation efficiency can be explored as intermediary or reinforcing channels in the relationship between investment and poverty reduction. Fourth, the focus of research also needs to be expanded to specific subsectors based on local communities, such as aquaculture, social forestry, and organic food agriculture, to evaluate the extent to which certain forms of investment contribute significantly to the community economy and empowerment of poor groups.

Finally, the inclusion of a mixed methods approach that combines quantitative and qualitative analysis will provide a better depth of understanding. This approach is very useful in revealing why investment policies and fiscal transfers often fail to produce direct impacts on poverty reduction, as well as

in capturing socio-cultural factors, institutions, and adaptive behaviors of communities that cannot be captured through statistical analysis alone.

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